

Public Housing Redevelopment and Crime: The New Communities Initiative, Washington, DC

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Abstract: This paper focuses on the intersections of public housing redevelopment, “gentrification,” and crime in Washington, DC. Using the four public housing sites that are part of the New Communities Initiative redevelopment program, it examines the changes and trends in crime that these selected sites and their surrounding areas have experienced since the program’s inception. Structurally, this study first looks at the history and policies behind the New Communities Initiative, identifying which aspects of the program have had more success than others and why. Next, combining a number of spatial and statistical analysis techniques, it examines the changes in crime that have occurred at the four targeted public housing sites. To end, it attempts to establish what the relationship has been between certain socioeconomic conditions and the changes in crime, assessing how the selected areas have fared in comparison to the rest of the city, and determining the possible influence of redevelopment efforts. Ultimately, this paper produces a historic narrative of the New Communities Initiative and its surrounding neighborhoods, while providing a useful case study of how public housing redevelopment can be applied to combat crime in the contemporary urban setting of the United States.

Who Benefits from a Changing City?

Washington, DC has undergone a rapid transformation since the turn of the century. After four decades of population decline and deterioration, during which it often claimed the unfortunate title of “Murder Capital,” the city has experienced a dramatic decrease in crime (at a much greater rate than nation-wide), a sharp increase in property values, and an influx of new residents. However, this decline in crime has not occurred evenly across the city and has been accompanied by an equally dramatic socioeconomic shift in many of the city’s neighborhoods. While the topic of gentrification in Washington, DC has been studied extensively, the changes occurring at or surrounding many of the city’s long troubled public housing developments have been examined less. It has yet to be determined how these areas have fared during Washington, DC’s current wave of “revitalization,” how the various factors changing the rest of the city have affected the reality for the residents there, and how direct intervention has impacted their circumstances.

By focusing on a select group of public housing sites that have been included in an ongoing redevelopment program, the New Communities Initiative, this study aims to establish that.

While discussing the economic growth and improving quality of life in present-day Washington, DC, is it important to determine who is actually benefitting from the situation: the newcomers, the incumbent residents or both? Unlike an indicator such as property values, which will affect different members of society in competing ways, lower levels of crime are generally accepted to be beneficial for all urban residents, thus making it an effective lens to measure a city’s progress. Therefore this study will examine how crime surrounding the New Communities Initiative sites has changed since the implementation of the program? How the socio-economic changes in these particular areas compare to those in other parts of the city and whether they factor into decreasing crime? Together with an overview of the physical and social changes that have occurred in these areas, it should help fill existing voids in the field and can help policy makers gauge which efforts and strategies make better use of their resources.

The New Communities Initiative: Background

The New Communities Initiative is a District of Columbia city government program aimed at redeveloping distressed public housing sites and revitalizing the communities surrounding them. Adopted in 2006, in response to the cutting of federal funds to the national HOPE VI program, the New Communities Initiative can be viewed as Washington, DC’s own local continuation of HOPE VI – which is largely viewed as “a major driver of neighborhood transformation throughout the 1990s and early 2000s” (NCI, 2013) – continuing the US Department of Housing and Urban Development’s (HUD) multifaceted approach of improving housing stock standards, providing supportive services, and decreasing economic segregation.

Accepting the urgency of taking such measures in some of Washington, DC’s poorest communities, and to effectively focus its resources, the initiative identified four “hot spot” public housing sites in different parts of the city that suffered from particularly high levels of poverty concentration and crime. These target sites are (refer to Figure A-1):

Barry Farms in the Anacostia neighborhood of Southeast DC;

Lincoln Heights/Richardson Dwellings in the Deanwood section of Northeast DC;

Park Morton in the Park View neighborhood of Northwest DC;

Northwest One (consisting of the now demolished Temple Courts and the Golden Rule Center, along with the non-NCI Sursum Corda housing development) in the New York Ave-NoMa section of Northwest DC.

The goal of the New Communities Initiative is to transform these distressed areas into “vibrant mixed-income neighborhoods that address both the physical architecture and human capital needs, where residents have quality affordable housing options, economic opportunities and access to appropriate human services” (NCI, 2013). The reduction of violent crime in these

Figure A-1



“high poverty” neighborhoods was also listed as a key mission of the initiative. The physical changes that the New Communities Initiative plans for are in part meant to demolish the spatial features that have helped make the public housing sites attractive to crime in the past, such as poor visibility from the street, and create new ones that will help prevent it, such as site integration into the street-grid and active public space. The human capital needs aspect of the program is aimed at providing residents with social services such as employment assistance, educational training, and child care, in the interest of helping this long-overlooked segment of the population gain access to the same amenities as other residents of the city, creating a social safety-net, and increasing their access to economic opportunities, ultimately deterring residents from criminal alternatives.

To outline this approach, the New Communities Initiative has four principles:

1. Mixed Income Housing – to de-concentrate areas of poverty and create vibrant mixed-income communities by introducing a mix of workforce, affordable, and market-rate housing.
2. One for One Replacement – to ensure that no public housing units are lost.
3. Right for Residents to Return/Stay – to engage the residents in the development planning process with the goal of ensuring that families are able to stay in their neighborhood.
4. Build First – to minimize displacement of existing residents by seeking to build new housing on the site prior to demolition of the existing distressed housing.

Despite wide-ranging support and the efforts of a diverse set of stakeholders, ranging from government officials and residents to private interest groups and technical advocates, the New Communities Initiative has been far from smooth in its implementation.

Literature Review

The published academic literature on public housing redevelopment and crime reduction tends to fall within two opposing categories: studies that do credit the examined policy/redevelopment with a decrease in crime in the study area and studies that do not credit the examined action with a decrease in crime (or do not observe a decrease in crime at all). Additionally, most studies are rooted in and set up their analyses based on more general theories concerning urban crime, gentrification, public housing, or urban redevelopment. More specifically, Social Disorganization Theory and Crime and Space. This thesis will attempt to supplement these established models by focusing on the intersections of redevelopment, socioeconomic changes, and crime.

Redevelopment Lowers Crime

The largest such group of literature is composed of studies that focus on housing redevelopment actions and identify a decrease in crime both at the project site as well as in the surrounding area, crediting the redevelopment efforts. Three such texts that this paper will reference are: “Movin’ Out: Crime Displacement and HUD’s HOPE VI Initiative” (Cahill, Downey, and Lowry: 2011), “HOPE VI and Neighborhood Economic Development: the Importance of Local Market Dynamics” (Zeilenbach and Voith: 2010), and “Public Housing Transformation and Crime: Making the Case for Responsible Relocation” (Popkin, Rich, Hendey, Hayes, and Parilla: 2012). Each study examines redevelopment funded through HOPE VI – the aforementioned U.S. Department of Housing and Urban Development’s public housing revitalization plan – which is fitting given that it has been by far the largest such initiative in the United States.

Geographically, these studies looked at five major American cities (Atlanta, Boston, Chicago, Milwaukee, and Washington, D.C.) spanning the East Coast, South, and Midwest regions of the country.

In terms of methodology, all three of these studies used a time series analysis (controlling for population change, seasonality, and city-wide trends using various regression models) to calculate the change in crime during and after the redevelopment of the public housing site (Zeilenbach and Voith: p 113-115). If crime decreased in both the redevelopment site and its surrounding area, and this decrease outpaced a decrease city-wide, the redevelopment can be viewed as having a positive impact on crime reduction in the area. If crime decreases on the immediate project site outpaces a city-wide trend but crime within its surrounding area does not, the redevelopment is viewed as having a neutral impact. However, if crime in the surrounding area has either decreased significantly slower than city-wide, while crime on the immediate project site has gone down, this is evidence to the occurrence of crime displacement and that the redevelopment has had a negative impact (Popkin, Rich, Hendey, Hayes, and Parilla: p 4).

The most extensive of the studies, “Movin’ Out,” also employed two other methods: a point pattern analysis and a Weighted Displacement Quotient.

A point pattern analysis in this instance examines the spatial distribution and density of crimes on a map, which can then be used to look at the presence of displacement (migration of points) or the diffusion of benefits (points becoming more sparse evenly across the study area) of crime (Cahill, Downey, and Lowry: p 17-18). Displacement of crime indicates that the redevelopment has had a negative impact on the surrounding area, while diffusion would indicate that the overall effect of the redevelopment was positive in terms of crime reduction.

The Weighted Displacement Quotient (WDQ), considered the most convenient method to identify crime displacement under time and data constraints, uses a formula to compare relative changes in crime between a target site (one that receives redevelopment work) and a control site (one that does not receive any redevelopment work) to the relative changes in crime between the same two sites surrounding areas. This method is also applied in this paper.

The three pieces each observed instances of generally positive impacts, although these impacts were of varying degrees.

The Zeilenbach and Voith study found that crime at and surrounding the two sites in Boston decreased at 48.3% and 63.4% resulting from the HOPE VI intervention, while the results in Washington, D.C. were mixed, with crime at one site decreasing greatly (by 59.3%) but actually increasing slightly (5.3%) at the other as a result of the HOPE VI redevelopment. The authors suggest that the relative isolation of the latter site from the surrounding neighborhood, as well as its proximity to other not-redeveloping public housing sites, could help explain the observed negative impact.

“Public Housing Transformation and Crime: Making the Case for Responsible Relocation” (Popkin, Rich, Hendey, Hayes, and Parilla: 2012) found that, like in the case of Boston, crime decreased dramatically in the areas immediately surrounding HOPE VI redevelopment sites in Chicago – a 60% decline in violent crime and a 49% decrease in property crime – pointing out that although this demonstrates an overall positive impact on crime reduction, it also goes to show how concentrated criminal activity was to the public housing site itself prior to the redevelopment. Crime also decreased at the Atlanta sites, although relatively slightly in comparison to Chicago (a 13% decline in violent crime and a 9% decline in property crime). The study also found instances of displacement in both cities, although instead of crime migrating to the surrounding area, it instead spread to the neighborhoods where former public housing residents relocated to – this type of displacement will be discussed shortly.

“Movin’ Out” observed the diffusion of benefits in both the Washington, D.C. cases using all three of its methodological analyses, with strong measurements in each pointing to a significant decrease in crime. The results from Milwaukee however, proved to be inconsistent and did not reveal a positive or negative impacts, instead demonstrating both increases and decreases in crime over the study period.

Despite identifying dramatic decreases in crime, these three studies hesitate to openly credit the redevelopment initiatives with the reduction in crime. In the “Movin’ Out” study, the authors acknowledge that in all three cases, there were other significant non-HOPE VI projects simultaneously underway in the areas surrounding their sites during the HOPE VI redevelopment, and that increased investment in the area – especially at one of the Washington, D.C. sites – throughout the duration

study contributed to the overall decrease in crime in the neighborhood (Cahill, Downey, and Lowry: p 74). The authors of the study focused on public housing demolition in Atlanta and Chicago do not indicate what impact they feel the demolition had on lowering crime in the surrounding areas, responsibly acknowledging that their quantitative analysis is too broad and vague to make such claims (Popkin, Rich, Hendey, Hayes, and Parilla: p 4). The Boston-Washington, D.C. study also does not attribute the decline in crime specifically to the HOPE VI redevelopment projects, conceding that “short of comprehensive, in-depth analyses of police reports, arrest records, and crime patterns over time [... ..] no good way has been found to either prove or disprove the crime displacement hypothesis” (Zeilenbach and Voith: p 166). However, it does point out that the lack of complaints of crime filed during the redevelopment years in surrounding areas suggests that if displacement did occur, it was minimal. Overall, this dominant group of studies, supported by their respective theoretical foundations, demonstrates a beneficial relationship between public housing redevelopment and crime reduction, be it direct or indirect.

Redevelopment Does Not Lower Crime

Opposing literature does not credit redevelopment with decreasing crime, focuses on increases in crime in areas surrounding redevelopment sites and in neighborhoods that received former public housing residents (Rosin: 2008)(Popkin, Rich, Hendey, Hayes, and Parilla: 2012), using their own adaptations of the point pattern and time series analyses.

Hanna Rosin’s controversial piece in *The Atlantic* discusses the findings of University of Memphis criminologist Richard Janikowski and housing expert Phyllis Betts concerning the migration of crime from demolished public housing sites to neighborhoods where former residents relocate. Janikowski noticed that in the years following the demolition of public housing projects in downtown Memphis, where crime used to be heavily concentrated, crime spread out and concentrated along major corridors into outlying parts of the city while crime downtown almost disappeared (Rosin: 1). By chance, this mapping was compared to Betts’ mapping of the movement of former public housing residents given Section 8 vouchers. To their mutual unpleasant shock, the maps matched up very closely, suggesting a correlation between these residents themselves and the

notion that crime follows them wherever they live. However, upon closer analysis, the two researchers believe they have found a more accurate reason to explain the increase in crime in the relocation neighborhoods. The areas where former public housing residents are able to afford to move to are generally among the most “vulnerable” parts of the city, with moderate levels of existing poverty. The large influx of extremely poor new residents then proceeds to push the neighborhood past a certain “tipping point” of extreme poverty concentration (generally somewhere between 20% and 40%) which then results in the dramatic increase in crime they observed in the outlying neighborhoods of Memphis (Rosin: p 3) by recreating poverty concentration circumstances similar to those that were present in the public housing developments. This hypothesis is further supported by observations of crime migration in Chicago, where outlying neighborhoods that used to have moderate levels of poverty also took on former public housing residents and have since experienced a slower decline in crime than the rest of the city, and in some cases, an occasional spike (Popkin, Rich, Hendey, Hayes, and Parilla: p 5-6).

As previously mentioned, in the “Public Housing Transformation and Crime” piece, the researchers found that crime decreased greatly in the areas surrounding the HOPE VI redevelopment sites but that it increased in the neighborhoods where the residents relocated. Comparing city-wide, regional, and localized statistics around these neighborhoods, their estimated trends suggest that violent crime in destination neighborhoods would have been 5.5% lower without relocated households in Chicago, and 2.8% lower in Atlanta; likewise, property crime would have also been 2.8% and 1.1% lower under the same circumstances in Chicago and Atlanta, respectively (Popkin, Rich, Hendey, Hayes, and Parilla: p 5).

They also found a strong relationship existed between the impact on crime of the relocated residents and the density with which they came to reside in the destination neighborhood: In Chicago, if the density of relocated residents is low (2 to 6 relocated households/ per 1,000), the destination neighborhood would have a 5% higher overall crime rate than similar areas that host no relocated households. If the density was moderate (6 to 14 relocated households/ per 1,000), violent crime would be 13% higher in Chicago and 11% higher in Atlanta, when compared with similar neighborhoods. If

the density is high (more than 14 relocated households/ per 1,000), overall crime would be 21% higher in both Chicago and Atlanta in the destination neighborhood compared to similar areas with no relocated residents (Popkin, Rich, Hendey, Hayes, and Parilla: p 5-6).

Overall, the literature that does not credit redevelopment efforts with a decrease in crime is more effective in demonstrating long-distance displacement of crime, not the effects of the intervention on the immediate surroundings of the former public housing sites. Therefore, it does not present a strong case against the generally beneficial effect public housing redevelopment has on crime reduction.

Theoretical Framework

The theoretical framework for this study bases itself upon the main concepts found in the existing literature, which generally fit into one of two theoretical schools concerning crime and public housing. The first is the Crime and Space approach school, which borrows from both Crime Prevention Through Environmental Design (CPTED) and defensible space theories, and is generally concerned with the urban design and non-possessive aspect of public housing, crediting them for creating very attractive settings for crime. The other school is based in Social Disorganization Theory, and is focused on the socio-ecological characteristics of an area. This school of thought credits the concentration of poverty, unemployment, and single-family homes in public housing as being highly influential in pushing individuals towards criminal activity.

In terms of contemporary research, this study wants to contribute to the debate surrounding whether or not the redevelopment of public housing has a positive impact on crime reduction on both the immediate site and in the surrounding area (Popkin, Rich, Hendey, Hayes, Parilla, 2012)(Cahill, 2011).

This discussion is rooted in the belief that the vast majority of public housing in the United States is a failed model of social housing – both socioeconomically and physically – which has for decades resulted in the concentration of extreme poverty and therefore proved to be an attractive environment for criminal activity (Lens, 2013).

The much disputed reasoning behind public housing

redevelopment is that once the existing public housing complex is demolished, crime in the area is broken up by the loss of its central node and that since the overall level of poverty in the community is diminished, fewer people in the community will turn to crime (Rosin, 2008). Likewise, when the redevelopment of the site is completed – typically with mixed-income housing – the new circumstances of the complex will not recreate previous conditions (Vale, 2012).

Among the most heated debates revolving around the redevelopment/demolition of public housing is the issue of crime displacement. When the public housing is demolished, does crime in the area indeed decrease or does it simply relocate (into the neighboring community or to other parts of the city? (Cahill, 2011)(Rosin, 2008). Previous studies have found that overall crime in the general vicinity of the redevelopment sites has decreased essentially across the board following the demolition of public housing complexes (Lens, 2013) (Cahill, 2011)(Zeilenbach and Voith, 2010), but that migration has occurred, predominantly in neighborhoods where former public housing relocate to, where their arrival increases the concentration of poverty in that area (Popkin, Rich, Hendey, Hayes, Parilla, 2012). Due to time constraints and resources, this study only examines possible crime displacement in the neighborhoods immediately adjacent to New Communities Initiatives sites. Concerning real estate values and socioeconomic conditions, the existing literature suggests that the concentration of poverty is strongly correlated to crime (Rosin, 2008)(Popkin, Rich, Hendey, Hayes, Parilla, 2012), and that a growing real estate market (in terms of value) plays a strong supportive role in the decrease of crime in areas surrounding redevelopment sites (Zeilenbach and Voith, 2010). Therefore, the decreasing effect of redevelopment on crime, the strong correlation between poverty and crime, and the beneficial relationship between increasing real estate values and declining crime will form the assumptive base for this study's tests.

Apart from measuring the impact of the public housing redevelopment on crime in the surrounding areas of each New Communities Initiative site, this study quantifies the relationship between changing socioeconomic conditions and crime for the neighborhoods surrounding each site. The goal of running this additional analysis is to determine how significant an impact the actual New Communities Initiative actions may have had on crime

in their respective areas and compare their changes to non-treated areas.

The in-depth descriptive section will discuss the more specific socioeconomic and built-environment changes that have occurred in the neighborhoods surrounding the sites as well as any other public service or police strategies that have been implemented in the areas throughout the duration of the New Communities Initiative, aiming to identify other factors that could have played a big role in the changing of the crime rates. The overall purpose of this study is to not only determine whether or not the redevelopment of public housing has a beneficial impact on crime in an area but to also provide a narrative account of the transformation these particular neighborhoods have undergone and how planning and policy may (have) dictate(d) these trends.

Methodology

The first part of this study – a historical, political, and built-environment summary of the New Communities Initiative’s progress – is based on research of government and consultant reports concerning NCI, newspaper articles gathered chronicling the process and its effect on residents and the community, and urban design surveys conducted at the sites.

For the quantitative analysis sections, the four New Communities Initiative sites were divided into two groups based on the characteristics of their surrounding neighborhoods. The Northwest One site was paired with Park Morton since they are both located in the more affluent Northwest quadrant of DC and their areas have experienced a rapid influx of wealthier residents in recent years. Northwest One, which has seen the most redevelopment work done since the initiative’s beginning, serves as the test site, while Park Morton, where work has significantly stalled, is the control site. Likewise, Barry Farm and Lincoln Heights were paired together due to their shared location east of the Anacostia River, an area of Washington, DC that has not experienced the same rapid influx of wealthier residents like more central parts of the city. In this case, Barry Farm was selected as the test site, due to the considerable redevelopment work that has been implemented immediately adjacent to the site, while Lincoln Heights, where no significant work has been done, serves as the control site.

The Weighted Displacement Quotient (WDQ) was selected to establish whether the displacement (migration) of crime had occurred in any of the test areas. The WDQ, considered the most convenient method to identify crime displacement under time and data constraints, is composed of two parts: a displacement measure, which subtracts the ratio of pre-intervention crime in the treated “displacement” (surrounding) area over the “control” (similar area surrounding a site with no treatment) area from the respective post-intervention ratio. This difference is then divided by the success measure, the difference of the ratio of after-intervention crime in the “target” (immediate) area over crime in the “control” (similar site with no treatment) area from the respective post-intervention quotient.

$$WDQ = \frac{Bt_1/Ct_1 - Bt_0/Ct_0}{At_1/Ct_1 - At_0/Ct_0}$$

This formula then provides a fairly simple figure typically between -1 and 1. A positive value demonstrates that crime has gone down at both the redevelopment site and in its surrounding area, meaning that crime displacement did not occur and crime did not simply move “around the corner.” A negative value up to -1 demonstrates that the displacement of crime has occurred, although the reduction of crime in the immediate area has decreased more than crime in the surrounding area has increased. Beyond -1 and 1, a positive value greater than 1 demonstrates that crime actually decreased more in the surrounding area than at the development site itself, while a value less than -1 demonstrates that crime increase in the surrounding area actually outweighs crime reduction at the project site and that overall the redevelopment has caused crime to increase (Cahill, Downey, and Lowry: p 19-20), resulting in an overall negative impact on crime reduction.

The respective target and displacement areas selected for the sites were any lots included within the boundary of the New Communities Initiative redevelopment sites provided by the DC government open data administrator and all the blocks that had their centroid* within a 1,000 ft radius of the redevelopment site (excluding those already selected as part of the actual redevelopment site). The crime rates were then calculated using the population living within those blocks and using the crimes that occurred within their boundaries. Calculating the crime rates at such a localized level is not only

required for calculating an accurate WDQ but also provides a very specific depiction of the crime situation in the area, which was important for later steps in the analysis.

To provide a visual representation of the displacement/diffusion of crime to go along with the WDQ figures, kernel density maps were created for each study area for the selected study years. These maps also helped identify specific concentrations of crime within the study areas themselves and tracking their growth/shrinking/migration provided even more insight into the spatial context of crime in these areas.

It is also important to note that not all total crime incidents were used to calculate the crime rates, but only the incidents that fell under the Violent crime category, which include the homicide, assault, robbery, and sexual offenses. This manner of selection was employed based on conclusions found in existing literature, which determined that these offenses typically demonstrate higher report rates, have a greater impact on the well-being of residents, and are more closely associated with the criminal reputation of an area (Ellen, 2009).

The second part of this study required creating a figure that could measure the socioeconomic and real-estate changes that have occurred in the areas surrounding the sites. Based on methods found in existing literature, a gentrification index for every census tract was set up to measure the magnitude of this change. The formula looked to increase upon the variables used in other gentrification indices, in the interest of greater balance. The formula was set up as follows:

$$\begin{aligned}
 &0.25 \times \text{Change in Median Income} \\
 &\quad + \\
 &0.25 \times \text{Change in Education Attainment} \\
 &\quad + \\
 &0.25 \times \text{Change in Median House Value} \\
 &\quad + \\
 &0.25 \times \text{Change in Median Gross Rent} \\
 &\quad = \text{Gentrification Index}
 \end{aligned}$$

It combines the measures of affluence in an area most often found in existing literature (Median Household Income and Educational Attainment) with a broad look at the real estate situation as well, acknowledging that most areas in Washington, DC have a combination of

owner and renter households, and that both markets experienced considerable growth in the selected research years.

This gentrification index then provides a figure also typically between -1 and 1. Positive values demonstrate the presence/occurrence of gentrification or the increase of an area's socioeconomic circumstances, while negative values demonstrate a decline in the socioeconomic circumstances of an area. For example, a positive value of 1 represents an average change of 100% for each category. In other words, if the Median House Income, Educational Attainment, Median House Value, and Median Gross Rent of a census tract all doubled from the initial study year to the latter, the resulting gentrification index for that area would score exactly 1; but if some categories increased by more than 100% while others increased less, the Index could still average out to 1. Likewise, a negative value of 1 represents an average 100% decrease in each category. Since the Index uses raw numbers of change instead of ratios comparing the change in an area to the city-wide change (for procedural mathematical reasons*), the resulting scores tend to trend in the positive direction and are best examined in relation to each other. This is further rationalized by the fact that 100% declines in categories would signify that incomes and values have actually fallen to zero, an occurrence that in reality is highly improbable.

The final stage of this study combines the results of the previous steps and aims to establish a relationship between changes in crime, the gentrification index, as well as the categories by themselves. Crime rate changes were calculated for each census tract and then plotted against the respective gentrification index figures of the census tracts.

To calculate more specific data corresponding to the development sites, instead of using census tracts for the study areas, census block groups whose centroid fell within a 2,000 ft radius of the redevelopment site were used to calculate the crime rates changes, and all of the violent crime incidents that occurred within those block groups. Once these study area crime rate changes were established for each of the four sites, their position on the plot (i.e. z-score) in relation to the overall trend line was examined. The assumption and hypothesis is that greater gentrification index figures will correlate with greater crime decrease rates, and that the crime decrease rates in the treated study areas will not only be greater

than those in the control areas but that they will also be significantly above the trend line for areas with similar or even higher gentrification index values. If statistically significant, such results could reasonably suggest that the redevelopment work has had a crime decreasing effect in the surrounding area.

In the instance of non-statistically significant findings, or the lack of an established trend, each of the socioeconomic categories that are part of the gentrification index will be examined separately in relation to crime rate changes to establish whether or not a relationship can be determined. The geographic parameters (census tracts vs. centroid census block group study areas) will remain the same.

Findings Part 1: New Communities Initiative Implementation, Obstacles and Successes

Nearly a decade after its launch, the New Communities Initiative is far from complete. Progress on redevelopment work varies greatly from site to site, and nowhere has the process been smooth. The problems the program has had are the results of logistical miscalculations, feasibility oversights, and bureaucratic inefficiencies. Moreover, repeated changes in local politics and city government administrations have repeatedly disrupted and further complicated its implementation.

The most noticeable complications for the New Communities Initiative have been demolition of existing housing and construction of new housing. As of 2014, only 250 out of the 1,500 units slated for demolition have actually come down (NCI, Annual Program Report 2014, p 3). This is partially due to the initiative's much-debated "Build First" principle, which stresses the development of new units before any existing ones are to be torn down, as well as shortcomings on the part of developers (Wiener, April 2014). Although 1,070 units are already built or currently under construction, half of them are market-rate apartments within the mixed-income housing developments, with only about 300 listed as affordable and another 264 as replacement units for former public housing residents – considering these numbers and the goal of improving public housing, the program can be viewed as less than 20% complete. Hence, given

that the initiative is far from complete and its full impact will not be felt until the program carries out its original plans, the following assessment of it should be regarded as more of a mid-term appraisal rather than a final assessment.

Northwest One (Reference Figure B-1)

At the Initiative's first selected site, Northwest One, progress has been the most significant. The 211-unit Temple Courts and 39-unit Golden Rule Center were demolished in 2008 and 200 families were relocated to other DCHA properties (Andersen, Oct. 2014). The first completed residential building at the site, SeVerna Phase I, was completed in the Fall of 2011 in place of the Golden Rule Center. Its 60 units were split into 30 replacement units for former Temple Courts and Golden Rule Center residents, and 30 "affordable" units (NCI, Annual Program Report 2014, p 5). In the Fall of 2014, another two mixed-income apartment buildings were completed, the 314-unit 2M located at the corner of M Street and North Capitol Street, and the 133-unit SeVerna Phase II directly south of Phase I. The 2M complex includes 59 replacement units for former residents and 34 "affordable" units, which are greatly outnumbered by the remaining 221 market-rate units in the building. SeVerna Phase II is more mixed, providing 48 replacement units, 53 "affordable" units, and 32 listed at market-rate. Of the 250 public housing units demolished in 2008, 137 have indeed been replaced, but there are currently no concrete plans for the development of the remaining 113 units (NCI, Annual Program Report 2014, p 5). The hope is that the next development will come to the lots that used to be Temple Courts (which are currently serving as a parking lot for busses) and will provide the remainder of the replacement units along with additional "affordable" ones. In the Spring of 2015, the DC Housing Authority issued a "Request for Proposals" for potential developers, seeking to develop the underutilized 6.6 acres and calling for an approximate 1,000 residential units combined with retail space. (NCI, Annual Program Report 2014, p 6).

A successful part of the redevelopment has been the construction of a new community space to the area. Located across from the SeVerna buildings, the Walker-Jones Education Campus opened in 2009. The 125,000 square foot facility replaced two deteriorating schools (Terrell JHS and Walker-Jones ES) with a 100,000 square foot K-8 school, a 20,000 square foot

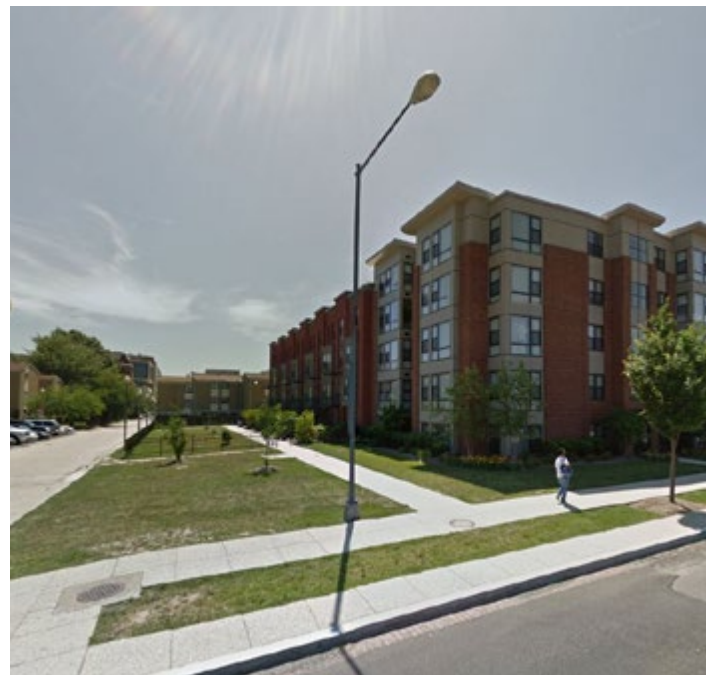
recreation center, a 5,000 square foot public library, along with a collection of new athletic fields and playgrounds. The school is one of the first LEED-certified green school buildings in the city, sporting a green roof along with other features that are geared to help students learn about sustainability (NCI, Annual Program Report 2014, p 6).



Concerning crime, before going into statistical analysis, the developments at Northwest One should suggest progress towards creating conditions that are believed to reduce crime. Foremost, the demolition of Temple Courts and the Golden Rule Center significantly decreased the concentration of poverty in the area. Coupled with the introduction of 507 units that are 27% low-income, 23% “affordable,” and 50% market-rate, the redevelopment work has created the beginnings of a mixed-income community. According to Social Disorganization Theory, this change in the socioeconomic make-up of the area should create new socio-ecological circumstances for the residents, therefore resulting in the decrease of crime. Likewise, the addition of improved community facilities and amenities in the neighborhood infuses the area with increased activity and services, creating further deterrents to crime.

On the other hand, from a Crime and Space perspective, redevelopment efforts have had a mixed effect on criminal activity in the area. Considering the present built environment of where the Temple Courts used to be, there is now less activity and less eyes on the street along that section of the northern side of K Street NW.

The same can be said for the western side of North Capitol Street south of L Street NW, where the northeastern section of the Temple Courts complex used to be. These changes could suggest a possible increase in crime. Likewise, the section of L Street NW that runs between First Street NW and North Capitol Street, north of the former Temple Courts and present-day SeVerna Phase I, still remains an incomplete through-street, with no sidewalks and fences running along both sides, preventing its use by pedestrians. Along First Street NW, the current frontages of the SeVerna buildings do little to add eyes and activity to the street. There are windows and a few entrances along the street, but the Golden Rule Center had terraces facing First Street NW and at two-stories tall, was at a more human scale than the five and nine-story SeVerna buildings. Likewise, the removal of the former Walker-Jones Elementary School has left the west side of First Street NW a vacant lot currently used to store construction materials, also subtracting from the potential activity of the block.



SeVerna Phase I (right) and sidewalk-less L Street NW (left).

However, what may ultimately prove successful is the considerable improvement in housing stock of the developments. All three residential buildings feature modern amenities, sustainable design, and are a significant upgrade over the distressed housing complexes they’ve replaced. This aspect may increase resident involvement in the personal maintenance of their buildings and overall vigilance of the space. There is still significant work to be done at Northwest One, but the redevelopment appears to be heading in an optimistic direction.

Park Morton (Reference Figure B-2)

At the Initiative's other NW Washington, DC site, Park Morton, progress has been far slower than at Northwest One. Despite having what many policy makers deemed to be the most attractive initial situation for redevelopment (increasing property values, developer interest, and nearby transportation options), these same circumstances have actually made overhauling the site more difficult.

Kimberly King, who supervises the Initiative for the Office of the Deputy Mayor for Planning and Economic Development, cites the difficulty of obtaining off-site parcels adjacent or near Park Morton to be the prime obstacle in the process. Unlike the public housing sites at Northwest One, which were surrounded by readily available government-owned land, most of the lots around Park Morton are privately owned (Weiner, April 2014). The redevelopment plan called for replacing the current 174 units with 500 new ones, in order to provide a sufficient number of replacement units, a large amount of "affordable" units, and enough market-rate units to make the project feasible for the developer (Quadel, p 21). The current footprint of Park Morton is too small to accommodate this amount of development, and therefore, nearby lots are required. The townhouse owners north, south, and west of the site were unwilling to part with their property and the businesses to the east along Georgia Avenue were reluctant as well. The initial developer, Landex Corp, selected in 2009, struggled to obtain nearby properties. It's only success came a block to the northwest of the site, at Newton Place and Georgia Avenue, where it obtained two parcels and completed an 83-unit mixed-income apartment building called the Avenue, which included 27 replacement units for Park Morton residents and 2,300 square feet of ground level retail, in 2012. In 2013, the development group claimed to of finally reached a deal with the property owners along Georgia Avenue immediately adjacent to the Park Morton site, but an official agreement was never signed and in February of 2014, the city terminated its contract with the developer, citing that the progress made over the five years was unsatisfactory (O'Connell and Samuels, 2014).

A new development team, led by the Boston-based firm Community Builders, Inc. was selected by the DCHA in November 2014, but as of the writing of this report there is no news of their progress.



Boarded-up units at Park Morton, looking SW from Park Road.

Currently, the changes at Park Morton can be summarized with the development of the Avenue and the boarding up of 21 vacated units at the site itself. Concerning the decrease in crime, the changes in the socio-ecological circumstances resulting from redevelopment efforts in the area are negligible. The addition of the mixed-income Avenue should be expected to of had a positive impact on crime reduction in the neighborhood, but its scale may prevent it from having significant impact. Furthermore, the resulting vacant units at Park Morton may in fact be serving as a crime-stimulating force according to Crime and Space theory.

Barry Farm (Reference Figure B-3)

One of the city's oldest public housing sites, Barry Farm, has experienced perhaps the second most significant amount of redevelopment work after Northwest One. No demolition has been done on the 444 existing public housing units at the site (432 at Barry Farm and 12 at the adjacent Wade Apartments) but 213 units have been completed at Sheridan Station and Matthews Memorial Terrace within two blocks of the Barry Farm campus. The 114-unit first phase of Sheridan Station, completed in the Winter of 2011, features 25 replacement units and 89 "affordable" units; Matthews Memorial Terrace, completed in the Winter of 2012, provides 35 and 64, respectively. The larger, second phase of Sheridan Station, is due in the Summer of 2015 and will offer 40 replacement units along with 93 "affordable" apartments (NCI, Annual Program Report 2014, p 10). Another 80 units that will be part of Sheridan Station will be for sale at market-rate, creating a unique mix of mixed-income owners and renters at the property. These developments will provide 100 replacement units for Barry Farm residents, less than a quarter of the required amount to meet the one-for-one replacement goal. No further residential redevelopment plans are currently underway.

Similar to Northwest One, the Barry Farm redevelopment plan has had success with renovating and improving community facilities in the area. The new Barry Farm Recreation Center, immediately to the north of the public housing campus, is due to be complete in the Spring of 2015, with its first phase (a LEED Silver-certified 8,800 square foot indoor swimming pool) completed in December 2014 (Quadel, p 29). Additionally, the Excel Academy Public Charter School, the city's first all-girls public charter school opened its doors to 700 pre-kindergarten through sixth grade students in 2008, immediately to the east of the Recreation Center.

Despite providing a larger overall number of mixed-income units, the redevelopment at Barry Farm may encounter the same issues as Park Morton by not yet creating a proportionately significant amount of mixed-income units in relation to the existing public housing. From a Social Disorganization Theory perspective, the remaining concentration in crime at the site may outweigh the positive impact the new developments may have in terms of deterring crime. More notably, the redevelopment efforts at Barry Farm fall short from a built-environment perspective due to the fact that the existing site is poorly



Sheridan Station (background) is connected to the Barry Farm site by a pedestrian bridge (foreground) that crosses over the Suitland Parkway (middle).

connected to the new housing. The Suitland Parkway creates a significant physical barrier between Barry Farm and Sheridan Station. The only direct access route between the two sites is a narrow fenced-in footbridge over the Parkway off of Stanton Road. This is a prime example of poor urban design, providing little to encourage activity in the area and essentially keeping Barry Farm as isolated as it has historically been. On the other hand, the redeveloped recreation center and school should provide some incentive to increased activity in the neighborhood, but since both are replacements of previously existing community amenities, apart from upgraded facilities, they impact on crime is also negligible.

Lincoln Heights (Reference Figure B-4)

During the planning process, Lincoln Heights was already expected to be the toughest site to redevelop. It's isolated and peripheral location makes it unattractive to real estate developers, its large size poses significant one-for-one replacement and temporary relocation obstacles, and even the steeply sloped terrain of the site have made the process very slow and difficult. Its timeline for completion has doubled since the Initiative's start, from 2015 to 2023, and even that is seen as overly optimistic by city policy makers (Samuels, Jan. 2014).

No demolition of the 440 units at the site (comprised of Lincoln Heights and the adjacent Richardson Dwellings) has taken place and only 41 replacement units have been completed, most of them significantly off-site. Marley Ridge, whose total 9 units are all replacement units but are also more than half a mile away from the Lincoln Heights site, is essentially in a different neighborhood; and the 26-unit 4427 Hayes Street NE property (9 replacement, 17 "affordable") is also half a mile away. The 29-unit "affordable" Eden Place development, which received New Communities Initiative funding but provides no replacement units, is almost a mile away from Lincoln Heights. Only the larger, 70-unit Nannie Helen at 4800, including 23 replacement and 47 "affordable" units, is located within a reasonable distance of the Lincoln Heights site, four blocks to the northeast (NCI, Annual Program Report 2014, p 8).

City plans for a 237-unit mixed-income development at a former trash collection site one block north of Lincoln Heights at 5201 Hayes Street NE were cancelled in 2011. The parcel was handed over to a Philadelphia-based firm which promised a 150-unit building with 50 replacement units, to date the property remains overgrown and untouched (Samuels, Jan. 2014). Furthermore, because of a relocation contract conflict between the federal Department of Housing and Urban Development (HUD) and the DCHA, the 9 replacement units at 4427 Hayes Street NE do not currently house former Lincoln Heights residents, and a resolution to the dispute has not been reached (Samuels, Jan. 2014).

More optimism surrounds the redevelopment of community facilities in the area. The prominent H.D. Woodson Senior High School, across Division Avenue NE from the Lincoln Heights received a much needed reconstruction in 2011 (Turque, 2011). The historic



Boarded-up units at one of the Lincoln Heights buildings at 50th Street and Eads Place. The playground (right) is new and the grass is mowed, but neither serves to deter the crime attracted to the empty courtyards abutting the vacant building (left).

Strand Theater, at 5131 Nannie Helen Burroughs Avenue, was purchased by the city in 2006, after the 600-seat former movie house and dance hall had stood vacant since 1959. Renovations and repair began in 2013 and the Washington Metropolitan Community Development Corporation, which was granted oversight of the development, is currently searching for its future tenant (NCI, New Communities Initiative 2014, p 8). Nonetheless, with no significant redevelopment work completed near the site, aside from the H.D. Woodson renovation, it is hard to predict that the New Communities Initiative has had a positive impact on crime reduction in the area from both the Social Disorganization Theory and the Crime and Space approach.

Human Capital Program

The New Communities Initiative's greatest successes may have arguably come in the form of service outreach programs that have been implemented in these areas as part of the initiative's "Human Capital" component. According to NCI reports, this aspect of the redevelopment process is "a critical element of the initiative and focuses on providing supportive services to residents to help households achieve self-sufficiency" (NCI, Annual Program Report 2014, p 4). By partnering with social service providers, the city claims to provide "comprehensive case management services" annually to "over 500 heads of households" (NCI, Annual Program Report 2014, p 4). The provided services include: needs-based service assessments, family development plans, school visits and attendance monitoring, employment readiness and placement assistance, referrals to mental health and substance addiction counseling and treatment, and financial literacy and budgeting training; in 2014, this component's budget was \$2.5 million (NCI Annual Report, 2014, p 4).

This component is important to the initiative's progress because it can partially make up for its many other shortcomings. However, there is little concrete information on how and when these services have been delivered, calling their supposed effective implementation into question. Furthermore, due to the difficulty of quantifying their impact, the "Human Capital" component of the New Communities Initiative will not be further examined in this study.

Outside Changes

Even though much of the public housing itself has not been redeveloped, some of the areas immediately surrounding the New Communities Initiative sites have nonetheless undergone significant transformation. Given that these changes have occurred in varying degrees among the four target sites, examining their impacts across the different areas helps connect these efforts to outside forces also affecting crime.

The changes brought on by way of the New Communities Initiative are not the only factors affecting crime in the areas surrounding the initiative's sites. Changes in the real estate market and socio-economic makeup of the surrounding community, as well as the city as a whole, also have an effect on crime; and although these

trends might be correlated with the impacts of the redevelopment, they should ultimately be considered independent of it. Therefore, in order to better understand the impact of public housing redevelopment on crime, trends in these redevelopment areas must be measured against trends in areas without redevelopment as well as trends in the city as a whole. Once these differences are established, they may illuminate the actual effects of public housing redevelopment.

Findings Part 2: Crime Rates

The findings of this study are quite varied, with some results reflecting expected outcomes and others illuminating completely unexpected results. Additionally, due to various data constraints, some outcomes are less complete than others and are better viewed as complementary details to the more comprehensive results. However, as a whole, the collection of findings presents an insightful and meaningful analysis of the changes that have occurred in the studied areas.

Most broadly, all four New Communities Initiative sites and their surrounding areas have experienced a decrease in crime since the program's beginning, which also follows a city-wide trend. However, these declines have been neither uniform nor equal among the sites.

Northwest One (Reference Figures C-1a, C-1b, C-1c)

Of the NW Washington, DC pair, the treated Northwest One site has seen the greatest decrease in violent crime. Within the target area of the public housing itself, crime went down 44.3% during the seven year span between 2006 and 2013. Although 2010 showed a slight uptick in the crime rate from 2006, this can actually be attributed to the loss of population (due to the demolition of Temple Courts and the Golden Rule Center in 2008) rather than an increase in crime. The 1000 ft displacement area surrounding the site – which was used to measure crime displacement and will be addressed soon – experienced a decline similar to the target area, while the neighborhood itself (2000 ft total area) witnessed the largest overall decline in violent crime, more than halving its rate (53.6%) in the same time frame.

Target Area (Public Housing Site)

Year	Crime Rate	Change
2006	3297	
2010	3692	+ 11.9%
2013	1835	- 50.3%

Displacement Zone (1,000 ft) (Exclusive*)

Year	Crime Rate	Change
2006	2561	
2010	2556	- 0.3%
2013	1719	- 32.7%

Study Area (2,000 ft) (Total)

Year	Crime Rate	Change
2006	3733	
2010	2435	- 34.8%
2013	1732	- 28.9%

* the 1,000 ft Displacement Zone is Exclusive, meaning that its calculated crime rate excludes crime incidents that occur at the target site as well as the population of the target site. The purpose of this is to examine its rate as spatially independent from the public housing site.

Figure C-1a: 2006

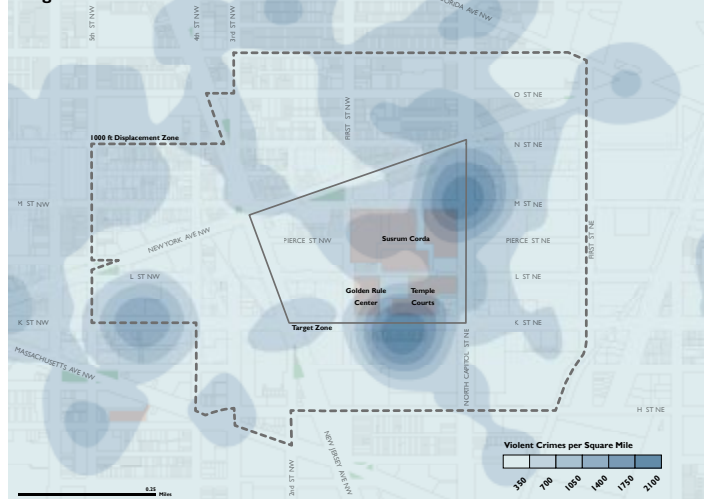


Figure C-1b: 2010

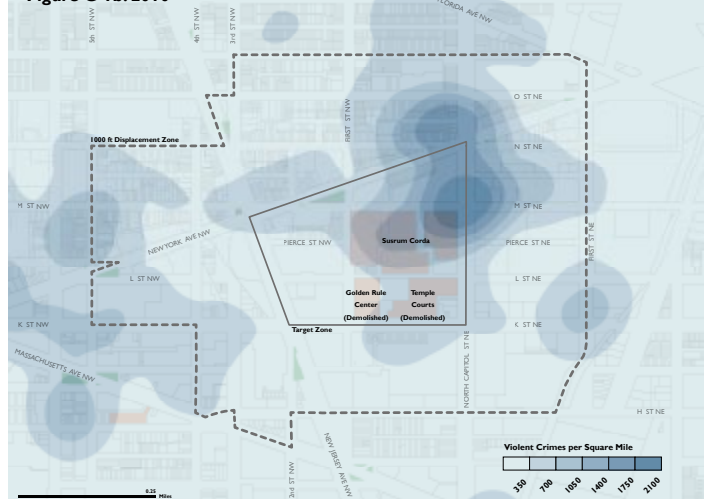
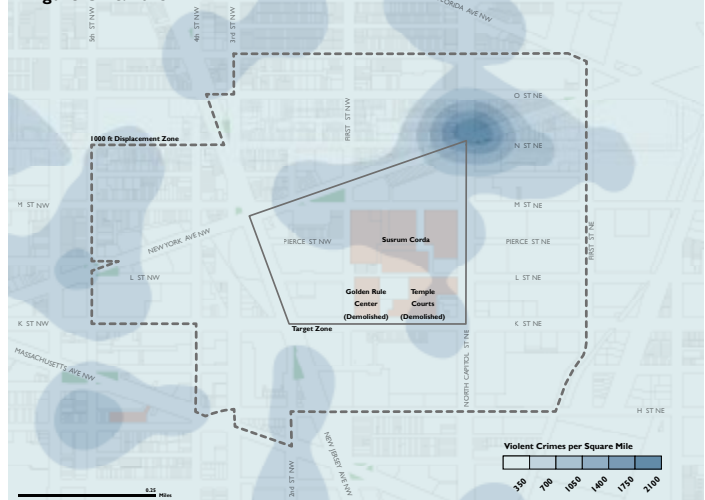


Figure C-1c: 2013



A consistent decrease in violent crime density is evident at both the target site and in the surrounding area. A former hot spot centered at Temple Courts disappears following demolition (2010) and does not reappear following the construction of the SeVerna Phase I (2013).

Park Morton (Reference Figures C-2a, C-2b, C-2c)

The partner control site for Northwest One, Park Morton, has also undergone a decrease in crime, but less drastic compared to the treated site and not sustained. For example, in the case of the public housing site itself, crime in 2006 was essentially at the same level as at Northwest One, then plummeting from 2006 to 2010, but surging back up in 2013. This see-sawing trend can be partially attributed to the smaller population of Park Morton (an average of 375 residents compared to Northwest One's average of 1700), which makes it much more prone to sudden jumps when calculating a crime rate. To put this in perspective, the actual count of violent crime incidents at the site in 2006 was 13, 5 in 2010, and 8 in 2013, fluctuations that in fact are far less dramatic than the rates seem to suggest. Nonetheless, the fact that there has not been a sustained and stable decrease in crime at Park Morton starts to suggest the possible beneficial impact of redevelopment efforts at Northwest One. Furthermore, when coupled with the rates of change in both the 1000 ft displacement zone and the neighborhood as a whole, Park Morton's surrounding areas demonstrate a slower decline than their counterparts near Northwest One.

Target Area (Public Housing Site)

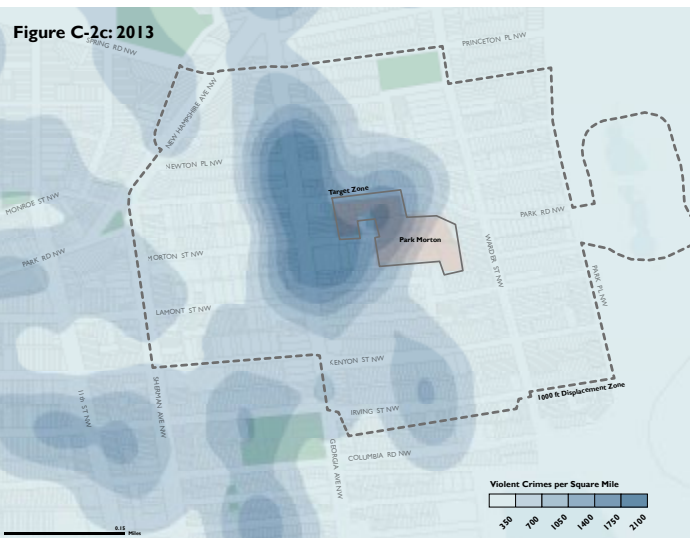
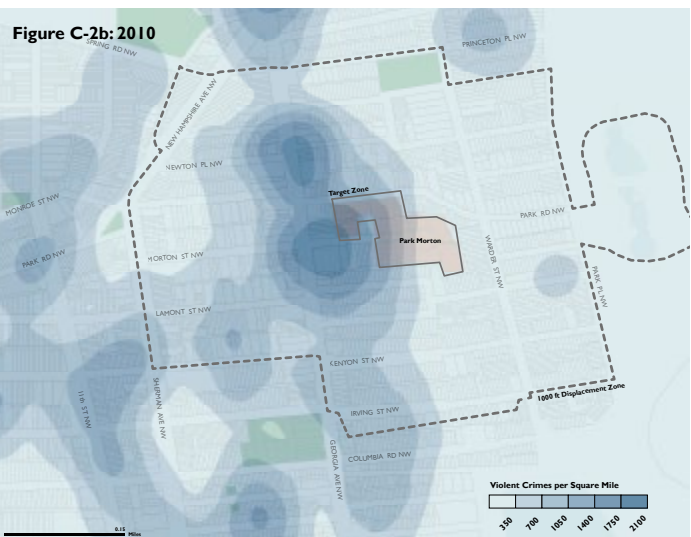
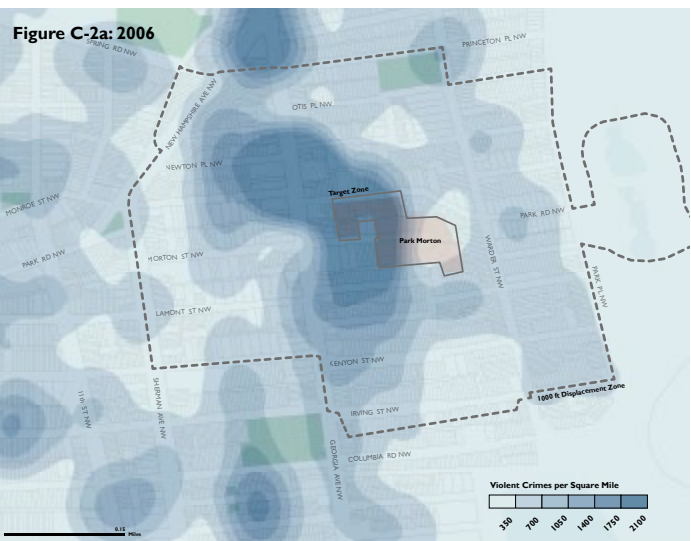
Year	Crime Rate	Change
2006	3250	
2010	1306	- 50.3%
2013	2332	+ 78.5%

Displacement Zone (1,000 ft) (Exclusive*)

Year	Crime Rate	Change
2006	2587	
2010	1380	- 46.7%
2013	1411	+ 2.2%

Study Area (2,000 ft) (Total)

Year	Crime Rate	Change
2006	2799	
2010	2113	- 24.5%
2013	1850	- 12.4%



Violent crime has remained considerably dense along Georgia Avenue near the target site, but its density has considerably decreased in the surrounding area, especially east of the project site.

* refer to page 15

Barry Farm (Reference Figures C-3a, C-3b, C-3c)

A somewhat similar relationship exists between the other pair of sites. The treated Barry Farm housing development itself has experienced a dramatic decrease in crime, while its surrounding areas have also seen a decline, although far more slight than those of Northwest One or Park Morton. In 2006, the Barry Farm site had one of the highest violent crime rates of any Washington, DC public housing development. Since the initiation of the New Communities Initiative, violent crime at the site has decreased considerably. However, crime in the surrounding area has not decreased at nearly the same rate as it has in the Park Morton or Northwest One neighborhoods, remaining relatively stable with a slight increase from 2010 to 2013. This can be partially explained by conditions that are specific to Barry Farm. Foremost is the physical separation of Barry Farm from its surrounding areas. Unlike Northwest One, Park Morton, and Lincoln Heights, Barry Farm is cut off from its adjacent neighborhoods by a highway, St. Elizabeth's Hospital campus, and Anacostia Park, which means that it is not entirely integrated into the surrounding city grid. This results in the isolation of Barry Farm-centered criminal activity to Barry Farm itself and lessens the degree of interaction between it and the nearby neighborhoods. Nonetheless, when compared to the changes in crime at Lincoln Heights, the suggested beneficial impact of the redevelopment efforts at Barry Farm become clearer.

Target Area (Public Housing Site)

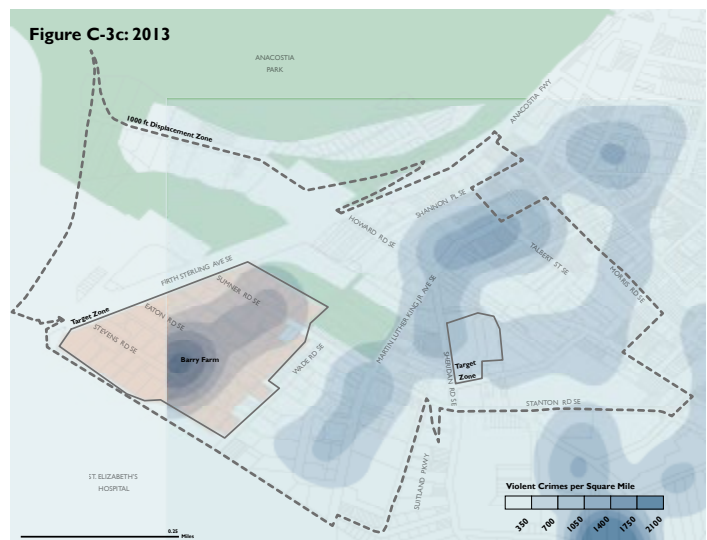
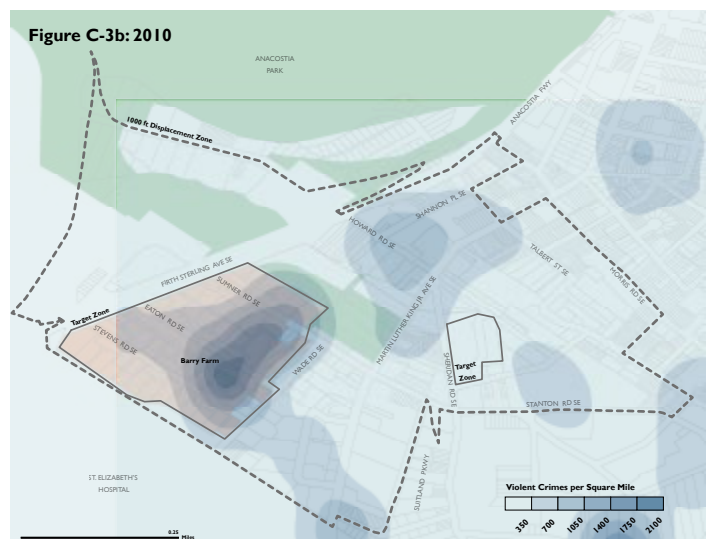
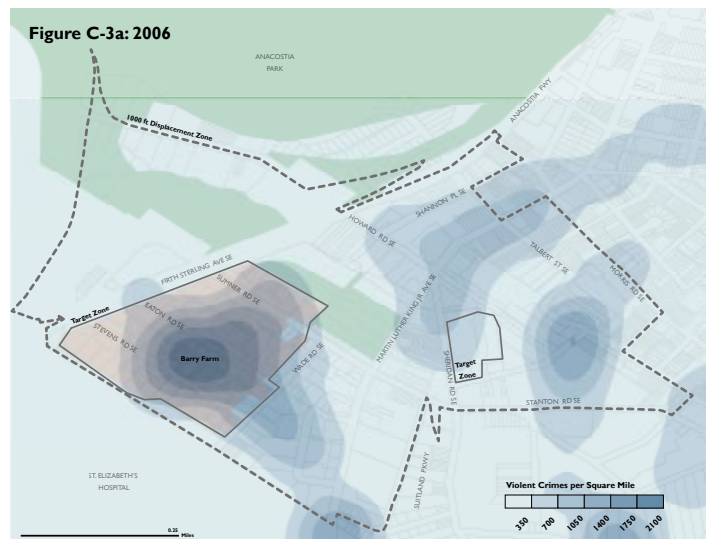
Year	Crime Rate	Change
2006	4197	
2010	3252	- 22.5%
2013	2044	- 37.1%

Displacement Zone (1,000 ft) (Exclusive*)

Year	Crime Rate	Change
2006	2396	
2010	2270	- 6.5%
2013	2323	+ 2.2%

Study Area (2,000 ft) (Total)

Year	Crime Rate	Change
2006	2755	
2010	2242	- 18.6%
2013	2285	+ 1.9%



The density of violent crime at the Barry Farm target site has noticeably decreased between 2006 and 2013, while dense disconnected pockets of crime in the surrounding area have slightly dissolved from year to year.

* refer to page 15

Lincoln Heights (Reference Figures C-4a, C-4b, C-4c)

The Lincoln Heights site has yet to see any redevelopment work since the start of the New Communities Initiative. There have been some redevelopment efforts in the areas nearby, but the unattractiveness of the site to developers has been a significant obstacle to any progress. As a result, the crime rate at Lincoln Heights has actually risen between 2006 and 2013, despite a slight decrease from 2006 to 2010. At the public housing development itself, the increase has been the greatest. In fact, while Lincoln Heights had the lowest violent crime rate among the four sites in 2006, it suffered from the highest in 2013. The areas surrounding Lincoln Heights now host the highest violent crime rate among the neighborhoods surrounding New Communities Initiative sites, whereas in 2006, they had the lowest. These unfortunate circumstances of increased crime compared to the decrease at Barry Farm further suggest the benefits of the redevelopment work.

Target Area (Public Housing Site)

Year	Crime Rate	Change
2006	2964	
2010	2254	- 23.9%
2013	4079	+ 80.9%

Displacement Zone (1,000 ft) (Exclusive*)

Year	Crime Rate	Change
2006	2681	
2010	2440	- 8.9%
2013	2770	+ 13.5%

Study Area (2,000 ft) (Total)

Year	Crime Rate	Change
2006	2023	
2010	1927	- 4.7%
2013	2231	+ 15.7%

Figure C-4a: 2006

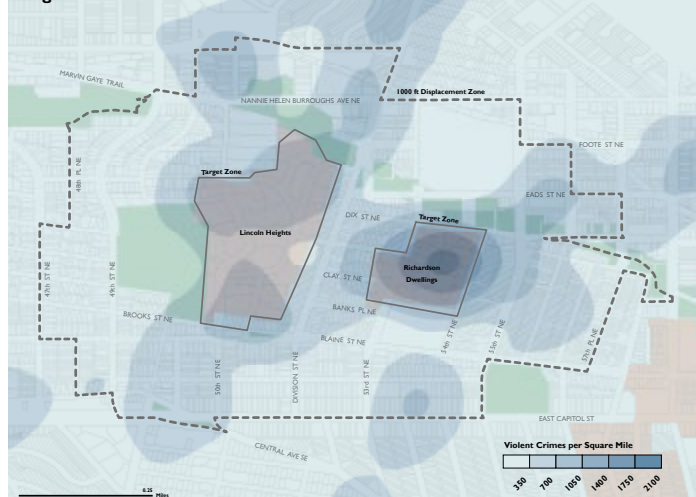


Figure C-4b: 2010

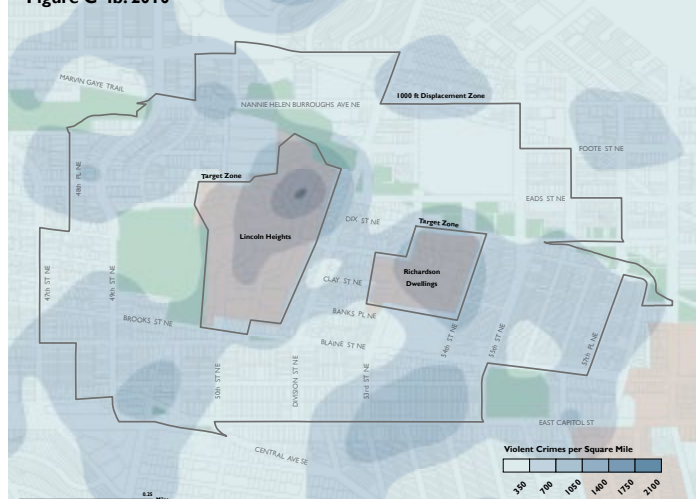
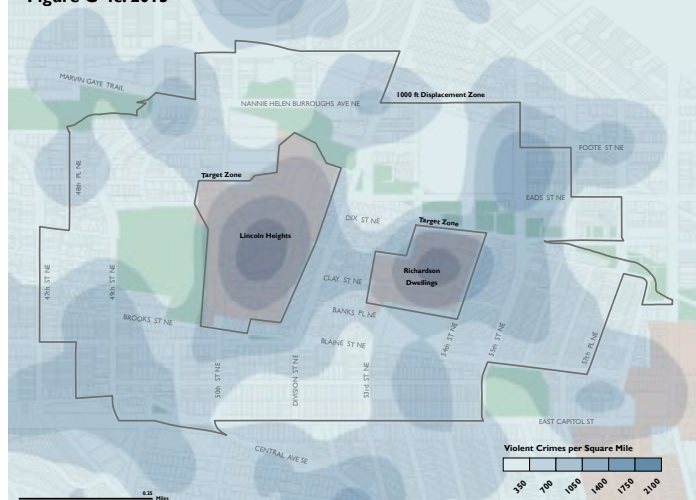


Figure C-4c: 2013



Violent crime at Lincoln Heights has remained stable throughout the study period, even redensifying at the target sites in 2013 compared to 2010. Lack of redevelopment means the site has essentially gone untreated.

* refer to page 15

These comparisons of changing crime rates at the NCI sites begin to illuminate the possible effect redevelopment has had in these areas. In both cases, without yet taking any additional socioeconomic conditions into account, the sites that have received the treatment have fared better than their respective control sites; and conditions at the site that has received the most work (Northwest One) have improved considerably, while conditions at the site which has received no work have actually worsened. However, before we further inspect these trends in the context of gentrification, it is also crucial to examine the possibility of crime displacement.

Findings Part 3: Crime Displacement

Considering the physical characteristics of the New Communities Initiative sites and the varying spatial relationships they have with their surrounding areas, taking a look at the possibility of crime displacement (migration) might provide some insight into the trends just discussed. Using the Weighted Displacement Quotient, this study was able to further identify evidence supporting the benefits of redevelopment.

Measured against its control site (Park Morton), Northwest One posted a WDQ of 0.476 for 2006-10, signifying that crime displacement has not occurred. A value of 0.476 indicates that crime in Northwest One's 1,000 ft displacement zone has decreased more than would be expected without any treatment (because the value is positive) and that the change in displacement area ratios is 47.6%, or essentially half, of the change in target area ratios. This is useful because it takes into account that crime has fallen in the displacement area of the control site as well, but that the decrease at the treated site is considerably greater. Considering that the crime rate in the Northwest One target area actually rose slightly during this time span, while the crime rate at Park Morton decreased substantially, creating unfavorable statistical circumstances for a positive WDQ, such a strong outcome strongly points to the fact that crime reduction in the displacement area was positively affected by the redevelopment efforts.

For 2010-13, the displacement area of Northwest One saw a slightly weaker relative decrease in crime than for 2006-10, posting a WDQ of 0.295, indicating once again that no crime displacement took place and that decline in the area surrounding the treated site was greater than that surrounding the control site.

Although less substantial than the impact for 2006-10, this positive WDQ result continues to suggest that a diffusion of benefits has been occurring surrounding the Northwest One site.

The crime displacement outcomes at Barry Farm are more varied. For 2006-10, its displacement area posted an extraordinary WDQ of 1.345, indicating that crime in the area decreased substantially more than at the site itself in relation to what would be expected given the same non-treated conditions present at the control site. This measurement may be the strongest evidence supporting the beneficial impact of redevelopment; but it is important to acknowledge the possibility that it is the result of Barry Farm's unique physical relationship with its surrounding area. Considering that the barriers dividing Barry Farm from its adjacent neighborhoods undermine interaction between the two, the high WDQ may actually be the consequence of circumstances and changes that are not related to Barry Farm redevelopment work. The likelihood of this is further increased when taking into account the much weaker WDQ of 0.097 the displacement area scores for 2010-13. Such a dramatic fluctuation, especially considering the increase of crime at its control site, suggests that redevelopment work at Barry Farm has little influence on crime outside its immediate target area. Nonetheless, the fact that neither treated site demonstrates crime displacement for both time periods, ultimately supports the argument that public housing redevelopment has at least a minor impact on crime reduction in surrounding areas.

Findings Part 4: Socioeconomic Trends

The socioeconomic changes that have occurred in the areas surrounding New Communities Initiative sites vary among each pair. Due to the fact that the only accurate median income data available at the census tract level before 2009 is for the year 2000 (which is too far from the 2006 implementation year of the New Communities Initiative to be relevant for this study), changes are only calculated between 2010 and 2013, which were nonetheless significant development years for the program.

Northwest One and Park Morton have both experienced an increase in median income and housing values, but the changes have been much more substantial surrounding Northwest One. The jump in median income from 2010 to 2013, following the completion of the first redeveloped properties, is most illustrative of this.

Northwest One

Year	Median Income
2010	\$36,064
2013	\$57,717
Change	+ 60.04%

Park Morton

Year	Median Income
2010	\$63,362
2013	\$68,335
Change	+ 7.85%

Changes surrounding Barry Farm and Lincoln Heights have been more divergent. The areas adjacent to Barry Farm actually experienced a significant decline in median income between 2010 and 2013, which may be the result of an influx of new public housing residents or another lower-income “affordable housing” population. Lincoln Heights on the other hand, has demonstrated growth.

Barry Farm

Year	Median Income
2010	\$33,146
2013	\$23,652
Change	- 28.64%

Lincoln Heights

Year	Median Income
2010	\$28,589
2013	\$31,920
Change	+ 11.65%

Median incomes do not always accurately portray the changing socioeconomic conditions of an area, and the calculated gentrification index should provide a much more balanced picture of the changes occurring. Using the gentrification index formula, the neighborhood surrounding Northwest One still demonstrates the strongest socioeconomic change among the four sites. The increases at Park Morton and Lincoln Heights are also considerable and quite parallel to their respective relative changes in income. Likewise, the decrease at Barry Farm also reflects its decreasing median income. However, in order

to give these values any context in terms of the possible effects of redevelopment, they must be compared to the city-wide gentrification index and the scores for areas with similar initial socioeconomic conditions.

<u>Location</u>	<u>Gentrification Index 2010-13</u>
Northwest One	+ 0.4038
Park Morton	+ 0.1812
Barry Farm	- 0.168
Lincoln Heights	+ 0.2457

With the exception of Barry Farms, the gentrification index for the New Communities Initiative site study areas is considerably higher than not only for the city, but for similar neighborhoods. In the same time period, the city had a gentrification index of 0.025, considerably lower than that of the New Communities Initiative study areas. Census tracts with median household incomes in the lower 50th percentile of the city for 2010 (\$56,052 inflation adjusted to 2013) scored a slightly higher gentrification index of 0.038; while the census tracts with median incomes in the lower 50th percentile for 2010 and violent crime rates in the upper 50th percentile for that group (1,541 per 100,000), demonstrated a gentrification index of 0.033. The considerable differences between NCI areas and their non-NCI counterparts further suggest that the circumstances in the study areas are particular and not the result of city-wide trends.

These changes may be the result of influences the public housing redevelopment has had on their surroundings areas, but are most likely an independent occurrences that are happening alongside the redevelopment work. If examining this phenomenon spatially, we can also see that upon closer inspection, the census block groups that make up the four study areas demonstrate some degree of inconsistency in each area (see Figures D-1, D-2, D-3, D-4), although the general distribution does indeed suggest higher rates of socioeconomic change within the vicinity of the targeted redevelopment sites. However, the main goal of this study is not to establish whether the New Communities Initiative efforts have contributed to gentrification in their neighborhoods, but to establish whether there exists a relationship between these socioeconomic changes and crime, and how this relationship has behaved in the study areas.

Figure D1. Northwest One

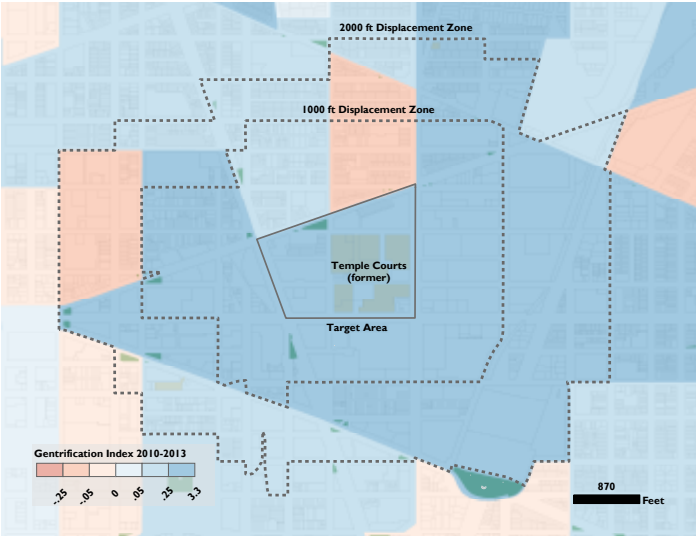


Figure D3. Barry Farm

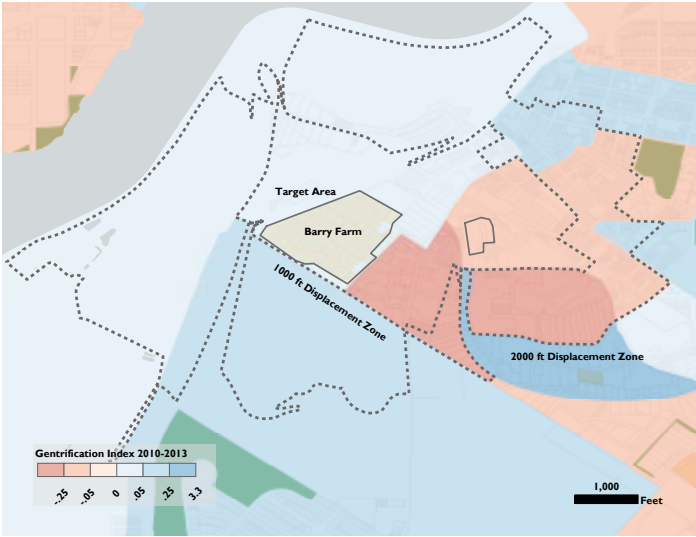


Figure D2. Park Morton

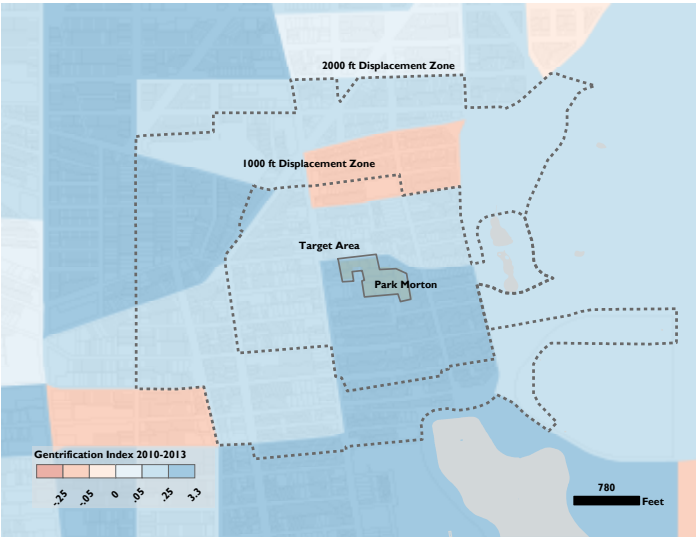
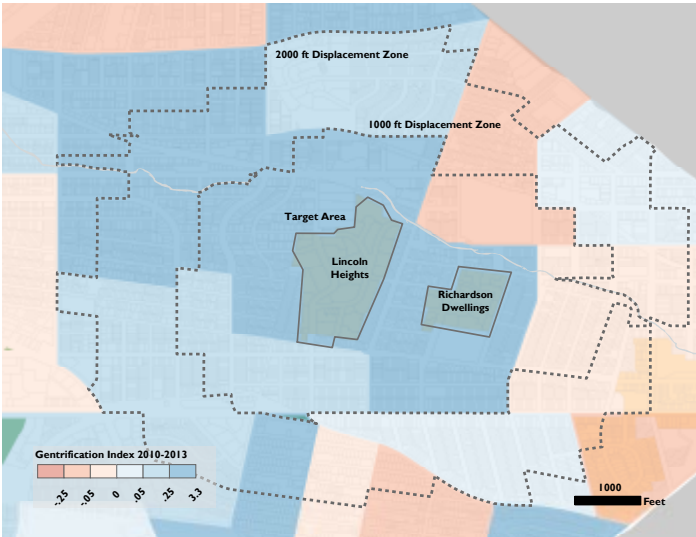


Figure D4. Lincoln Heights



Findings Part 5: Socioeconomic Trends vs. Crime Changes

When examining the relationship between the gentrification index and changes in crime, the assumption was that higher index scores would correlate with greater decreases of crime and lower (or negative) index scores would correlate with slower decreases (or increases) in crime. A regression analysis has shown that this not the case (see Figure E-1). Although the overall trend appears to show a beneficial relationship between the gentrification index and crime decrease (as the gentrification increases, crime decreases), this relationship has an R-Square value of 0.017, meaning that only 1.7% of the relationship can be explained by the trend line. In other words, there is essentially no correlation between the two, and given that both the y-intercept and x-coefficient have p-values acceptable at the 90% confidence interval (1.5-6 and 0.08, respectively), this result is statistically significant. However, what is an encouraging sign of the possible positive impacts the New Communities Initiative has had on crime is that three of the four sites land below the trend line, meaning that crime there decreased more than would be predicted.

Given the lack of a relationship between the gentrification index and the decrease of crime on a city-wide scale, it is useful to narrow down the sample size and examine how this relationship has played out in lower income neighborhoods (those with median household incomes in the lower 50th percentile in 2010)(see Figure E-2). The result is similar to that of the city-wide relationship – an increasing gentrification once again appears to be correlated with decreasing crime.

However, although the R-Square value is much higher among lower income tracts compared to the city-wide figures, at 0.066, suggesting a stronger relationship between the two at this scale, the trend still only accounts for 6.6% of the observed values. These results are statistically significant at the 95% confidence interval, with a y-intercept p-value of 0.0015 and an x-coefficient p-value of 0.016. Once again, three of the four New Communities Initiative sites score better than would be predicted by their gentrification index, further suggesting that the redevelopment efforts may have had a positive impact on reducing crime.

Finally, in the interest of further specifying the findings, the regression was narrowed down to lower income

tracts that also demonstrated higher levels of crime (violent crime rates per 100,000 in the upper 50th percentile for 2010)(see Figure E-3). Looking at the 44 remaining census tracts that fit this criteria, a trend similar to the ones observed for the city-wide tracts and the 90 lower income tracts is evident – higher gentrification index values appear to be correlated with decreasing crime. Of the three scales, this one demonstrates the highest correlation, with an R-Square score of 0.103, meaning that up to 10% of the observed values can be explained by the calculated trend. Although this figure suggests a stronger relationship than both of the previous regression analyses, it is still quite weak in practical terms since some 90% of the observed data remains essentially randomly distributed. Furthermore, only the x-coefficient is statistically significant at the 95% confidence interval, with a p-value of 0.034, while the y-intercept scores a p-value of 0.145, meaning that there is a 14.5% the y-intercept of the trend line is accidental. The three New Communities Initiative sites which scored better than predicted in the previous two scales of examination, fare better than expected among lower-income high-crime census tracts as well, while the Lincoln Heights study area maintains its underperforming status.

Further narrowing the scale of analysis was deemed unwarranted as it would reduce the sample size even further and result in statistically insignificant results.

For instance, when performed on the New Communities Initiative study areas alone, the regression produced an R-Square value of 0.216, but a y-intercept p-value of .98 and an x-coefficient p-value of 0.535.

Figure E-1: City-Wide Gentrification Index vs. Crime Change

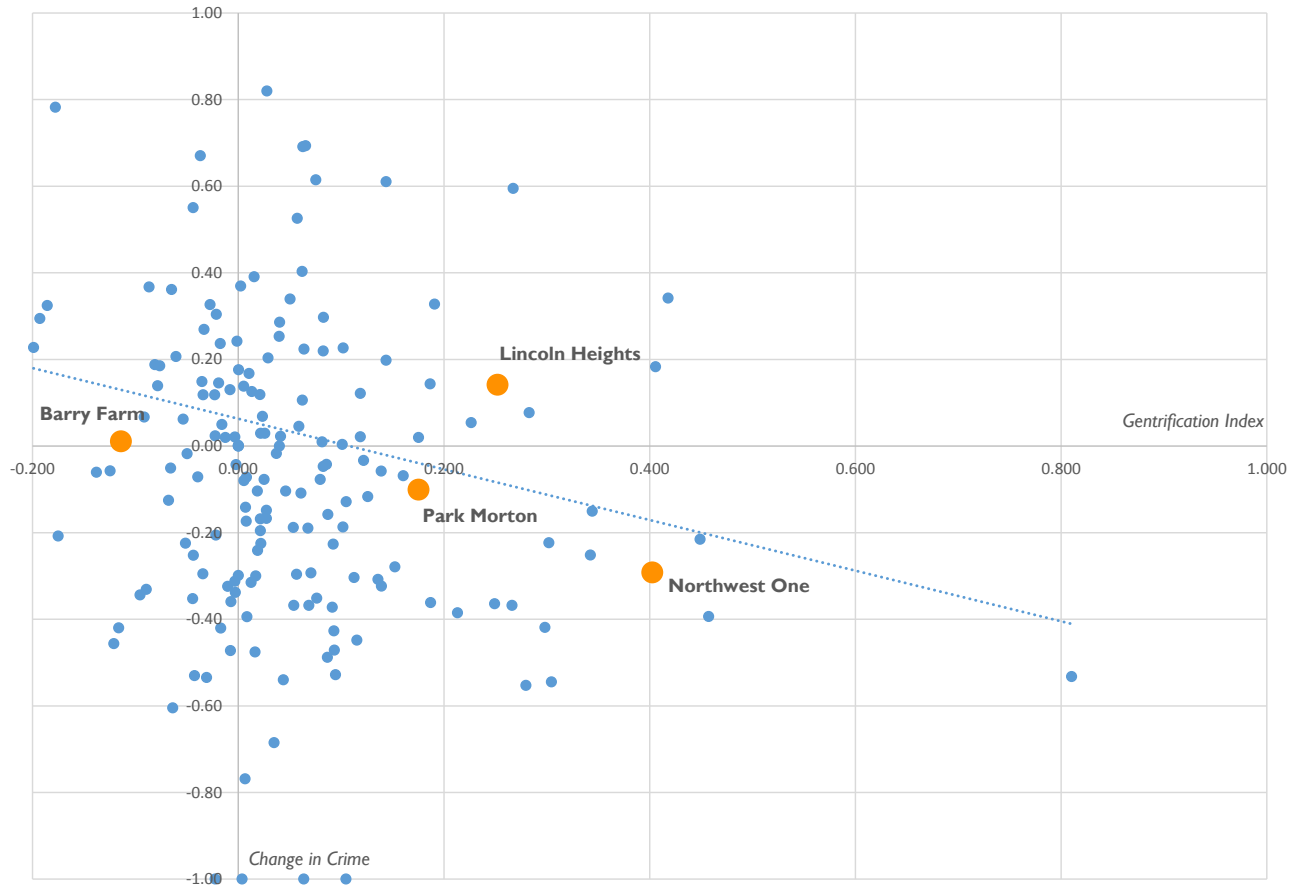


Figure E-2: Lower Income Tracts: Gentrification Index vs. Crime Change

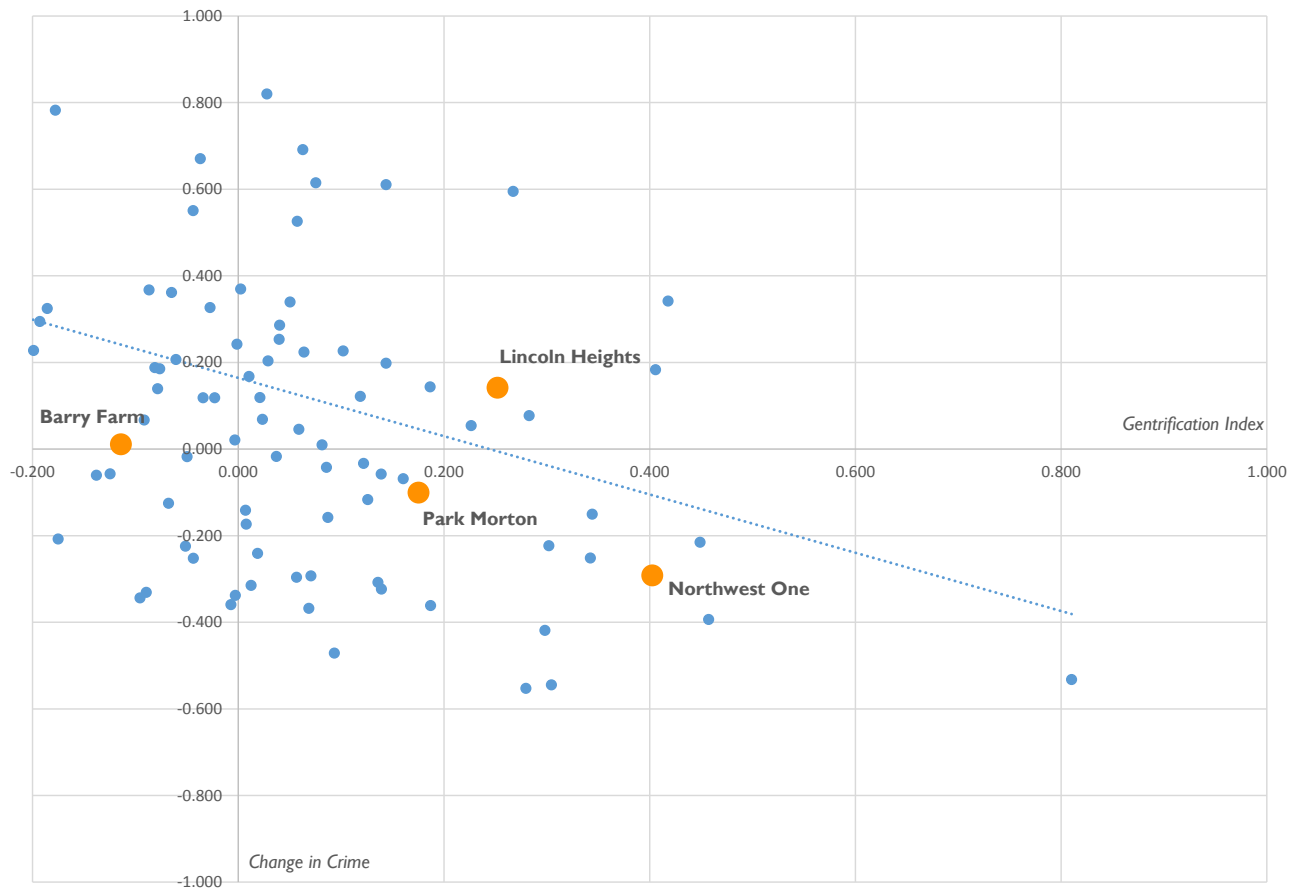
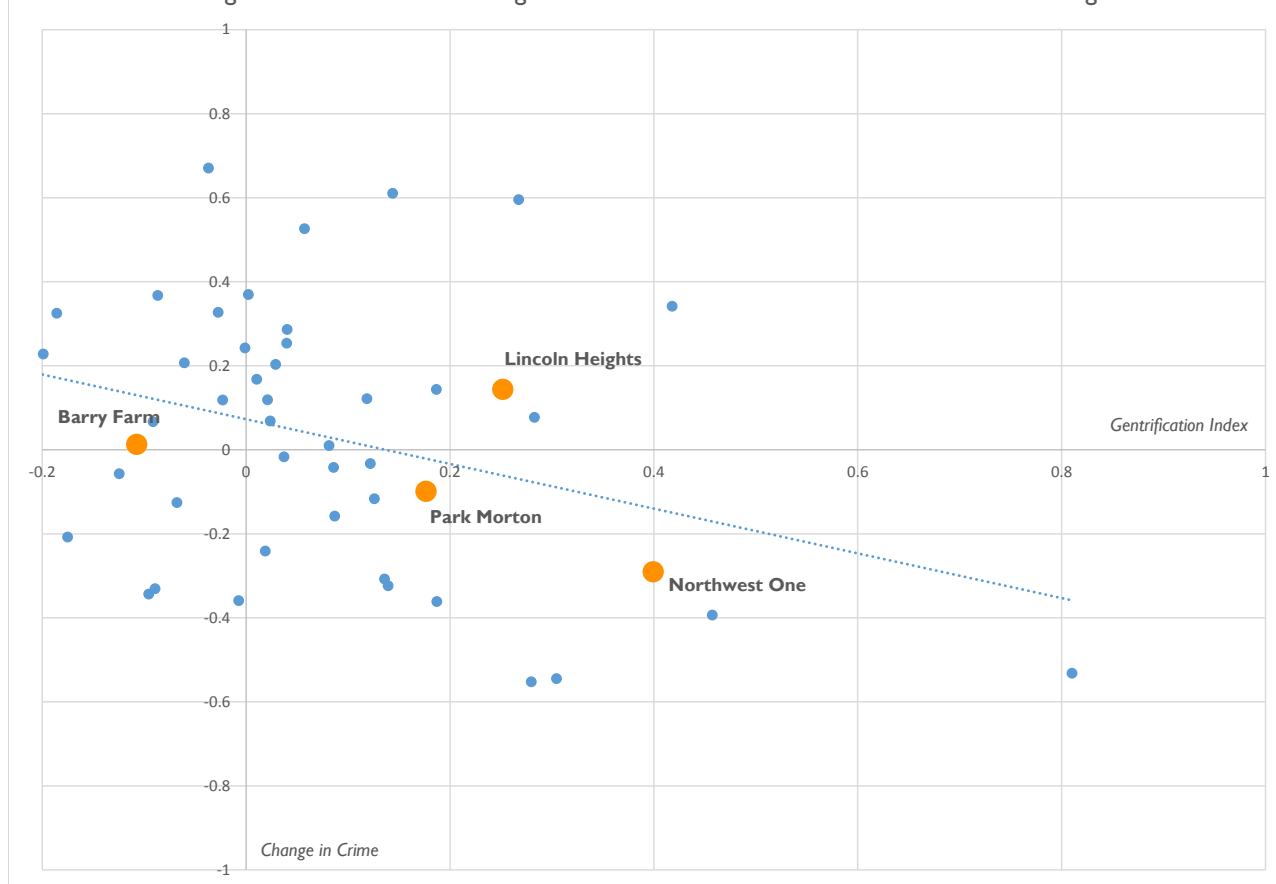


Figure E-3: Lower Income High Crime Tracts: Gentrification Index vs. Crime Change



Conclusions

The New Communities Initiative needs restructuring.

As a public housing redevelopment program, the performance of the New Communities Initiative has been largely unsatisfactory. Overall progress has been slow, and of the components that have actually been implemented, many have been carried out inconsistently with the initiative's original guiding principles. Furthermore, redevelopment efforts have mostly been concentrated at only two of the four sites, creating a new disparity between the target areas. This study found two key issues that stand out as the major obstacles hindering the program: 1) financing, including major funding gaps, the initiative's dependence upon private developers and the real estate market, 2) a miscalculation of the feasibility of the Build-First principle has made the first steps of the implementation unreasonably difficult.

From its inception, the New Communities Initiative was far too ambitious considering the funding available to it and the complicated financing of development in Washington, DC. In 2006, the total program was predicted

to cost approximately \$1.6 billion (Northwest One - \$350 million; Park Morton - \$170 million; Barry Farm - \$500 million; Lincoln Heights - \$550 million), including not only construction fees but a long list of property rights fees, law expenses, and taxes. After city-funding, expected developer expenses, Low-Income Housing Tax Credits (LIHTCs), and DC's Housing Production Trust Fund bonds, analysts have estimated the current funding gap at \$325 million (Quadel, p 35) and it is uncertain where this remaining money will come from.

Optimistic expectations about the housing market in 2006 were dissipated by the Great Recession, which hit in 2008. Work was already underway at Northwest One, but the pool of willing and capable developers for the remaining sites quickly dwindled. Committing to public housing redevelopment was too risky, and already complicated sites, such as Lincoln Heights (which was too isolated) and Park Morton (which lacked the necessary space), became less attractive investments and extremely difficult situations to successfully navigate. Growth in the city's real estate market has signaled a change in fortunes, but if the leaders in charge of NCI would like to avoid previous mistakes, a restructuring of the program's financial model would serve it well.

The Build-First principle, although ideal in intent, unfortunately put severe constraints on the New Communities Initiative's development process. Foremost, to function in practice, it requires site control of numerous off-site locations - something the program does not currently have. Subsequently, obtaining these sites and then developing them, before any redevelopment work can start on the target site itself has proved excessively time consuming and expensive. The development of the Avenue near Park Morton and Sheridan Station in the Barry Farm area were ultimately in line with this principle, but nonetheless took five years to accomplish. This situation is a core reason why progress has been so slow.

Ultimately, initial plans for the New Communities Initiative were treated as ready for implementation far too early in the process. In reality the program's framework was more conceptual than practical, and its planning lacked both research and a well-developed approach.

Redevelopment has helped decrease crime.

Implementation shortcomings aside, this study has found evidence that New Communities Initiative redevelopment efforts have indeed contributed to lowering violent crime at the target sites themselves as well as in the neighborhoods surrounding them. Since the program's implementation, violent crime has gone down considerably at three of the four selected sites.

The decrease between 2006 and 2013 has been most dramatic at Northwest One, where coincidentally the most redevelopment work has been completed. On the other hand, at the Lincoln Heights site - where no significant redevelopment work has been accomplished - crime has dramatically increased, demonstrating that these changes are likely not the result of a city-wide trend but an occurrence specific to these sites. Likewise, the rate of decrease in the three study areas which experienced a decline outpaces the city-wide decrease by a wide margin and the overall decrease in lower-income areas as well.

The possible effects of New Communities Initiative redevelopment fit into both the Crime and Space model and the Social Disorganization Theory approach.

The physical removal of poorly designed public housing buildings in the Northwest One area resulted in an immediate dissolving of criminal activity that used to

be centered around the complex. Replacing it with more integrative housing structures improved the site's connection to the street grid, its visibility, and opened it up to increased pedestrian activity. Likewise, the upgrade in the condition and quality of the housing stock suggests the creation of defensible space within the complex, where residents will be more aware and involved in how their residential grounds are being used. This attention and concern for the space has been shown to deter crime, since criminal activity becomes less tolerated and more actively unwelcomed.

The disparity between Northwest One's crime decrease relative to Park Morton and Barry Farm (where physical changes have been smaller) is also evidence to this.

From a Social Disorganization Theory perspective, socio-ecological changes brought upon as a result of New Communities Initiative efforts have played an even larger role in the decrease of crime.

At Northwest One, Park Morton, and Barry Farm, redevelopment work has introduced mixed-income housing and provided improved community facilities. These changes have diminished the concentration of poverty in these areas, created more economically diverse communities, increased neighborhood street activity, and provided vital recreational alternatives for youth. This shift significantly factors into creating a socio-ecological environment that deters crime.

Moreover, an expansion of public services in these areas through the Human Capital program combats issues such as unemployment, which have been shown to promote crime, and provides vital assistance to at-risk residents, such as single-parent households.

However, these observations are also limited in determining what exact impact the New Communities Initiative has had on crime reduction in these areas. They do not present the magnitude of influence redevelopment has on this decrease and the data does not account for policing strategies implemented during the same time period. In other words, there are outside variables that this analysis was unable to control. Likewise, all studies of crime have to take into account that crime statistics themselves are problematic in that they are dependent on reporting, and that especially in high crime areas, the calculated rate of crime may not be entirely accurate.

Socioeconomic changes have impacted the decrease in crime less than redevelopment.

The relationship between crime and socioeconomic indicators is complex, but in the case of the New Communities Initiative, this study's results suggest that the link between general conceptions of gentrification and crime are relatively weak in comparison to the impact of public housing redevelopment.

A statistically low correlation between the gentrification index and crime decrease city-wide, where the combined socioeconomic indicators do not effectively predict a change in crime, demonstrates that it is unlikely that one caused the other. Furthermore, even a considerably narrowed down sample of the city (low-income, high crime tracts) reveals only a 10% association between the two.

In the field of social sciences, a 10% correlation is not a figure to ignore, but when compared to other studies, where a similar relationship has been demonstrated to be far stronger, this study chooses to reject that the considerable socioeconomic changes surrounding the New Communities Initiative sites in this case have had a larger effect on decreasing crime than redevelopment.

However, an improvement of the statistical model used to measure socioeconomic changes and their relationship to crime may reveal more significant results. Indicators such as property values and incomes are affected by confounding variables and would benefit from stronger control. Likewise, this study only used a linear regression to test the variables, which may have oversimplified their relationship. The use of more specific and accurate data (the availability of which is unfortunately limited) and the application of a more complex model (ex. Weighted Geographic Regression) could produce far more meaningful results. Lastly, a change in scale for examining both socioeconomic changes and crime - smaller for more site-specific and spatial results and larger for establishing more general relationships or long distance movements of crime - could yield revealing connections.

Policy Recommendations

As stated in the conclusion, this study has found that the New Communities Initiative has the correct intentions but fundamental flaws in its framework and implementation. However, the foundations for a successful redevelopment program are there. The following are recommendations this study believes could improve the New Communities Initiative and help the program achieve its initial goals:

- the city must take greater responsibility in the implementation of the initiative, it is ultimately their legacy; less dependency on developers.
- a restructuring of the financial model and the development of new funding streams will help alleviate the program's funding gap.
- the creation of a short-term/long-term plan for each site will improve scheduling and provide a more realistic time frame for the program.
- a rethinking or possible elimination of the Build-First principle will repair or remove a major obstacle that has hindered the program from the start.
- create stronger guarantees and incentives for residents to remain in their neighborhoods following redevelopment.
- maintain and expand the Human Capital aspect of the program, it is key to improving the quality of life for all of the areas' residents.
- increase community engagement and promote resident involvement, a more inclusive program is a better program.

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References and Citations

- "About the New Communities Initiative." 2013. New Communities Initiative Retrieved September 10, 2014. from <http://dcnewcommunities.org/about-nci/>
- Andersen, Mark. "How D.C.'s Plan to Save Low-Income Housing Went Wrong." October 29, 2014. Washington City Paper. <http://www.washingtoncitypaper.com/blogs/citydesk/2014/10/29/how-d-c-s-plan-to-save-low-income-housing-went-wrong/>
- Bates, Allyson Marie. 2012 "The Impact of Gentrification on Low-Income Individuals in the Washington, DC Metropolitan Area." Dissertation. Howard University Department of Economics.
- Cahill, Meagan and P. Mitchell Downey, Samantha Lowry. 2011. "Movin' Out: Crime Displacement and HUD's HOPE VI Initiative." Urban Institute Retrieved August 3, 2014 from <http://www.urban.org/uploadedpdf/412385-movin-out.pdf>
- Cahill, Meagan. 2011. "Using the Weighted Displacement Quotient to Explore Crime Displacement From Public Housing Redevelopment Sites." *Cityscape: A Journal of Policy Development and Research* 13: 103-134.
- Fagan, Jeffrey and Garth Davies. 2000. "Crime in Public Housing: Two-Way Diffusion Effects in Surrounding Neighborhoods." In *Analyzing Crime Patterns: Frontiers of Practice*, edited by Victor Goldsmith, Philip G. McGuire, John H. Mollenkopf, and Timothy A. Ross. Thousand Oaks, CA: Sage Publications: 121-136.
- Gabor, Thomas. 1981. "The Crime Displacement Hypothesis: An Empirical Examination." *Crime and Delinquency* 27:390-404.
- Gabor, Thomas. 1990. "Crime Displacement and Situational Prevention: Toward the Development of Some Principles." *Canadian Journal of Criminology* 32:41-73.
- Morenoff, J. D., R. J. Sampson, and S. W. Raudenbush. 2001. "Neighborhood Inequality, Collective Efficacy, and the Spatial Dynamics of Urban Violence." *Criminology* 39:517-560.
- Lawrence, Will. 2013. "Does Gentrification Lower Crime: A Look at Granger-Causality in Washington, D.C." *The Park Place Economist* 21:86-92.
- NCI. Annual Program Report 2014. http://dcnewcommunities.org/wp-content/uploads/2014/06/FINAL-FOR-PRINT_NCI-Annual-Report_1140513-2.pdf
- Neibauer, Michael. 2011. "D.C. delivers \$17M grant for 2 M St. NE." *Washington Business Journal* Retrieved September 10, 2014 from <http://www.bizjournals.com/washington/blog/2011/08/dc-delivers-17m-grant-for-2-m-st-ne.html>
- O'Connell, Jonathan and Robert Samuels. "D.C. parts ways with developer of Park Morton complex." Feb. 10, 2014. *The Washington Post*. <http://www.washingtonpost.com/news/capital-business/wp/2014/02/10/d-c-parts-ways-with-developer-of-park-morton-complex/>
- Quadel Consulting and Training LLC. "Policy Advisor's Recommendations On the District of Columbia's New Communities Initiative." 2014. Retrieved September 10, 2014 from <http://s3.documentcloud.org/documents/1287738/0829-policy-advisors-recommendations-dd.pdf>
- Popkin, Susan J., Michael J. Rich, Leah Hendey, Chris Hayes, and Joe Parilla. 2012. "Public Housing Transformation and Crime: Making the Case for Responsible Relocation." Urban Institute Retrieved August 6, 2014 from <http://www.urban.org/UploadedPDF/412523-public-housing-transformation.pdf>
- Roman, Caterina G. and Meagan Cahill, Mark Coggeshall, Erica Lagerson, Shannon Courtney. 2005. "The Weed and Seed Initiative and Crime Displacement in South Florida: An Examination of Spatial Displacement Associated with Crime Control Initiatives and the Redevelopment of Public Housing." Urban Institute Retrieved September 18, 2014 from http://www.jrsa.org/ws-eval/studies_other/displacement-final-report.pdf
- Rosin, Hanna. 2008. "American Murder Mystery." *The Atlantic* Retrieved July 28, 2014 from <http://www.theatlantic.com/magazine/archive/2008/07/american-murder-mystery/306872/3/>
- Samuels, Robert. "D.C.'s Lincoln Heights waits for renewal as city's affordable-housing strategy languishes." January 8, 2014. *The Washington Post*. http://www.washingtonpost.com/local/2014/01/08/c57456a4-789a-11e3-8963-b4b654bc-c9b2_story.html
- Samuels, Robert. "In District, affordable-housing plan hasn't delivered." July 7, 2013. *The Washington Post*. Retrieved September 18, 2014 from http://www.washingtonpost.com/local/in-district-affordable-housing-plan-hasnt-delivered/2013/07/07/789f1070-bc03-11e2-97d4-a479289a31f9_story.html
- Samuels, Robert. "D.C. mayor aims to restart New Communities Initiative." Dec. 1, 2014. *The Washington Post*. http://www.washingtonpost.com/local/dc-mayor-aims-to-restart-new-communities-initiative/2014/12/01/6069e27a-797e-11e4-84d4-7c896b90abdc_story.html
- Turque, Bill. "A hopeful moment as new H.D. Woodson High School opens its door." August 13, 2011. *The Washington Post*. http://www.washingtonpost.com/local/education/a-hopeful-moment-as-new-hd-woodson-high-school-opens-its-doors/2011/08/09/gIQAf6p1DJ_story.html

Sturtevant, Lisa. 2013. "The New District of Columbia: What Population Growth and Demographic Change Mean for the City." *Journal of Urban Affairs* 36.2:276-299.

Vale, Lawrence. 2012. "Housing Chicago: Cabrini-Green to Parkside of Old Town." *Places* Retrieved September 22, 2014 from <http://placesjournal.org/article/housing-chicago-cabrini-green-to-parkside-of-old-town/>

Weisburd, David and Laura A. Wyckoff, Justin ready, John E. Eck, Joshua C. Hinkel, and Frank Gajewski. 2006. "Does Crime Just MOve Around the Corner?: A Controlled Study of Spatial Displacement and Diffusion of Crime Control Benefits." *Criminology* 44:549-592.

Wiener, Aaron. "Why Is Overhauling the Park Manor Public Housing Complex So Difficult?" April 30, 2014. *Washington City Paper* Retrieved September 10, 2014 from <http://www.washingtoncitypaper.com/blogs/housingcomplex/2014/04/30/why-is-overhauling-the-park-morton-public-housing-complex-so-difficult/>

Wiener, Aaron. "Report: D.C. Should Redevelop Public Housing Without Replacing Units First." September 9, 2014. *Washington City Paper*. Retrieved September 10, 2014 from <http://www.washingtoncitypaper.com/blogs/housingcomplex/2014/09/09/report-d-c-should-redevelop-public-housing-without-replacing-units-first/>

Wiener, Aaron. "Long-Stalled Park Morton Gets a New Nudge Toward Redevelopment." November 12, 2014. *Washington City Paper*. <http://www.washingtoncitypaper.com/blogs/housingcomplex/2014/11/12/long-stalled-park-morton-gets-a-new-nudge-toward-redevelopment/>

Zeilenbach, Sean and Richard Voith. 2010. "HOPE VI and Neighborhood Economic Development: The Importance of Local Market Dynamics." *Cityscape* 12:99-131.